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ANALYSIS OF RISK FACTORS FOR POSTPARTUM HEMORRHAGE FOR IRAQI WOMEN WHO UNDERWENT CAESAREAN SECTION

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Abstract:

One hundred patients in the obstetric service were collected for follow-up at different hospitals in Iraq whom underwent a caesarean section for a period of one year. An analysis of socio-demographic characteristics and other various factors that may influence the caesarean section complications, particularly post-partum bleeding.

The pregnant ladies were divided into two groups of 60 patients with an estimated blood loss of >1000 ml and a second group of 40 patients with an estimated blood loss of <1000. A cross-sectional study of those pregnant women who underwent a caesarean section was conducted with identification of risk factors.

All data were analysed by used SPSS SOFT IBM 22 program, and the tools that were used in this study are (statistical relationships, standard regression, arithmetic mean, and logistic regression to analyse risk factors).

Average maternal age for the first group (Estimated blood loss ≥ 1000) was 37.4 (7.2), and for the second group (Estimated blood loss < 1000) was 36.4 (4.9). Average period of gestation for the first group was 37.8+2.2, and for the second group was 38.1+2.2.

Multivariable analysis to risk factor related to PPH of women who underwent caesarean section was multiple gestation pregnancy 2.98 (1.77 - 3.45) with p-value <0.001 and pre-delivery haemoglobin (g/dl) was less than 11 g% for OR 95% 2.2(1.78-3.5) with p value 0.003.

Keywords: Gestation, pregnancy, blood, PPH, haemoglobin, caesarean section

INTRODUCTION

Primary postpartum haemorrhage (PPH) is conventionally defined as an estimated blood loss of more than 500 mm in the first 24 hours when the delivery is vaginal and more than 1,000 mm after caesarean delivery [1,2]. It occurs in 2-4% of deliveries and 6-7% of caesarean sections. In 1% of cases, the bleeding is severe, corresponding to a blood loss greater than 1,000 mm. [3,4]

It is the most common cause of mortality (19%) and maternal morbidity in the world. In developed countries, it produces 8% of deaths, while in developing countries, it is responsible for 19.7% of maternal deaths, and in Iraq, 23% of maternal deaths.[5]

Prevention and management of primary PPH is essential to reduce maternal mortality. The causes of postpartum haemorrhage are classified into four main groups, and the most common is uterine atony in 70% [6,7]

Bleeding after childbirth is a normal part of recovery as blood clots are common in the first few days, and within 10-14 days after delivery, a slight increase in

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bleeding is observed. This is thought to be due to the shedding of the scab where the placenta was attached to the uterus. [8,9]

Most women have red, brown, and then yellow discharge for 4-6 weeks after giving birth, but women may bleed for two or 90 days. [10]. Women who have had a C-section experience vaginal bleeding as part of their recovery and the amount of bleeding gradually decreases over the first few weeks. [12]

Bleeding can be described as a natural physiological process in which the body gets rid of the remnants of the endometrium that was formed during pregnancy [13]as well as the remnants of the placenta, cervical mucus, and secretions resulting from the healing of the wound left by the placenta after its expulsion. [14]

This bleeding with vaginal discharge continues between six and eight weeks after delivery, during the puerperium, and will gradually decrease. [15]

The present work aims to explore the analysis of risk factors for postpartum haemorrhage for Iraqi women who underwent caesarean section in addition to describing the interventions made to control this bleeding and maternal outcome. [16]

MATERIAL AND METHOD

A cross-sectional study was conducted for a certain amount of pregnant women who underwent a caesarean section, where the risk factors for sick women were identified in this study.

Demographic information and data were collected for pregnant women from different hospitals in Iraq, where the number of participants in this study was 100 patients, and they were distributed into two groups of 60 patients with Estimated blood loss ≥ 1000 ml and the second group of 40 patients with Estimated blood loss <1000.

A written form was obtained from the participants in this study for the purpose of collecting preliminary information related to patients.

The maternal age (years) of the study patients ranged between 30-45 years, and a previous history of caesarean section was found for ten patients in the Estimated blood loss < 1000 group, and for the Estimated blood loss ≥ 1000 ml, N=60 group, it was found on 12 patients

Postpartum haemorrhage has been described if more than 500 millilitres of blood is lost after caesarean delivery or more than 1,000 millilitres after caesarean delivery.

There are two types of postpartum haemorrhage (the first is early postpartum haemorrhage: which is severe bleeding

Occurs during the first 24 hours after birth and type II delayed postpartum haemorrhage: It is abnormal vaginal bleeding that occurs after the first 24 hours and may continue for 12 weeks after birth.

STATISTICAL ANALYSIS

Cooperated was made with the hospital for the purpose of obtaining the results in the medical record to the patients, and then they were sent to an expert for analyse the data by used SPSS SOFT IBM 22 program.

The tools that were used in this study are (statistical relationships, standard regression, arithmetic mean, and logistic regression to analyse risk factors).

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RESULTS

Table 1- Baseline demographic results of patients=100

Variable	Estimated blood loss < 1(N=40	Estimated blood loss ≥ 1(N=60
Maternal age (years)	36.4 (4.9)	37.4 (7.2)
BMI		
BMI normal (18-24.9)	15	20
overweight (25-29.9)	25	40
Parity		
≥1	22	44
0	8	16
Previous caesarean section		
Yes	10	12
No	30	48
Fetuses number at the deliv		
Singleton	32	49
Twins	5	8
Triplet	3	3
Gestational age		
37–39 weeks	27	48
≥40 weeks	10	7
<37 weeks	3	5
History of PPH		
No	36	53
yes	4	7

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Fig 2- Outcomes of patients study according to a period of gestation, g%

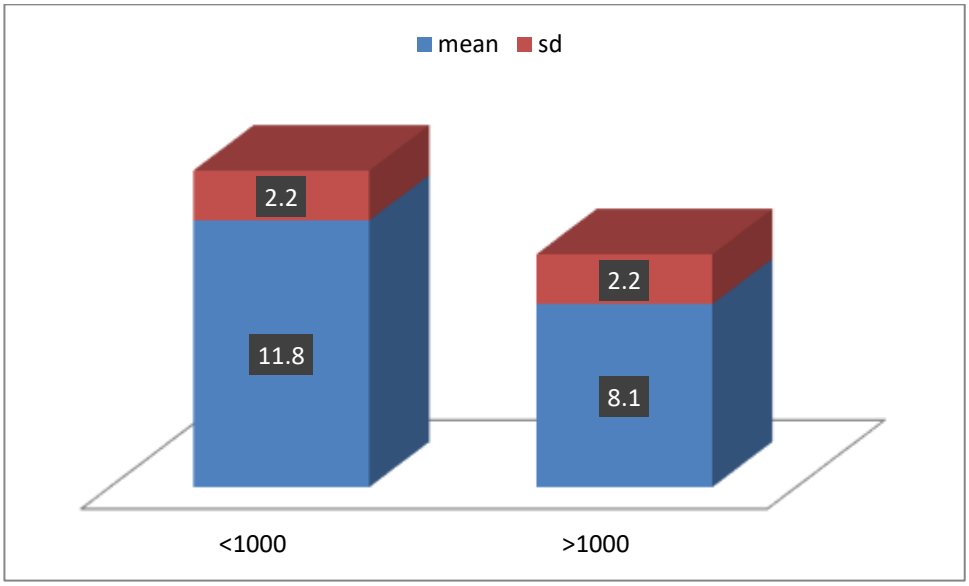

Table 2- Neonatal characteristics and Blood transfusion of study for 100 patients

Variable	<1000	>1000
Birth weight (g)	3044.0 ± 621.2	3203.9± 535.99
Birthweight >4000 g	4 (10)	10 (16.6)
Blood transfusion	---	16 (26.6)

Fig 3 - Distribution of patients in two groups according to the effect of risk factors on bleeding

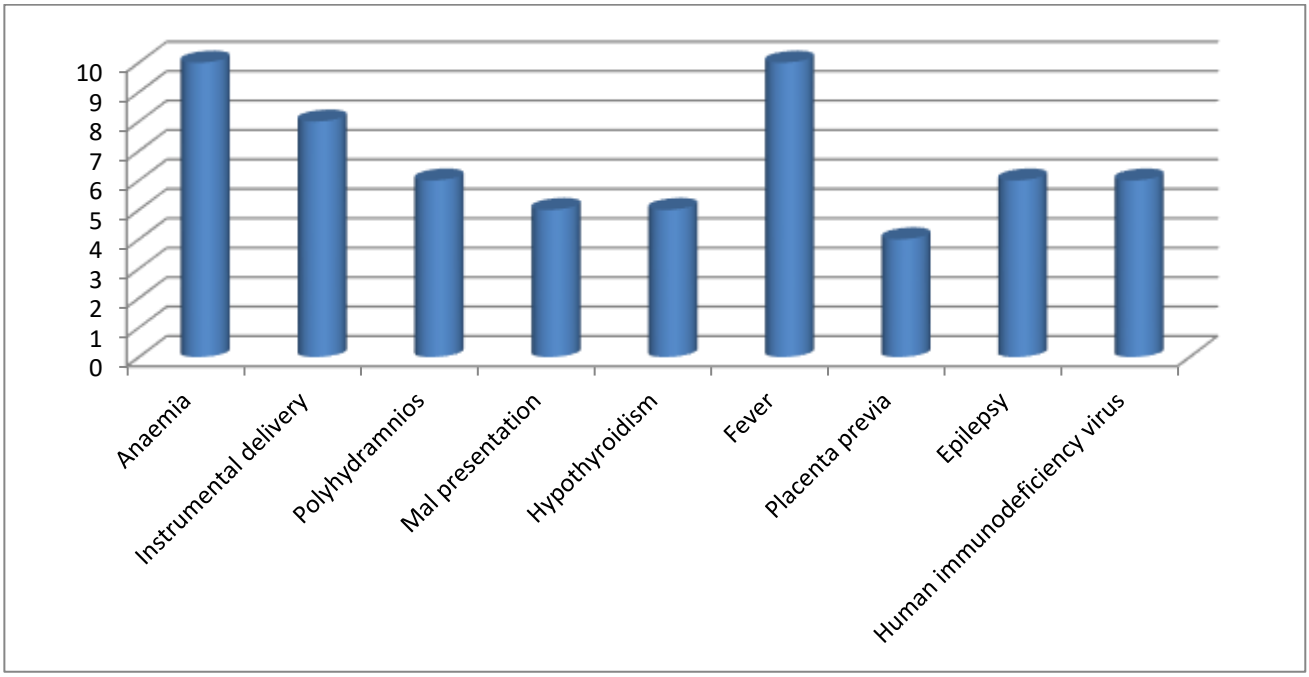

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Fig 4- Study characteristics of patients who underwent caesarean section (type of anaesthesia, type of caesarean)

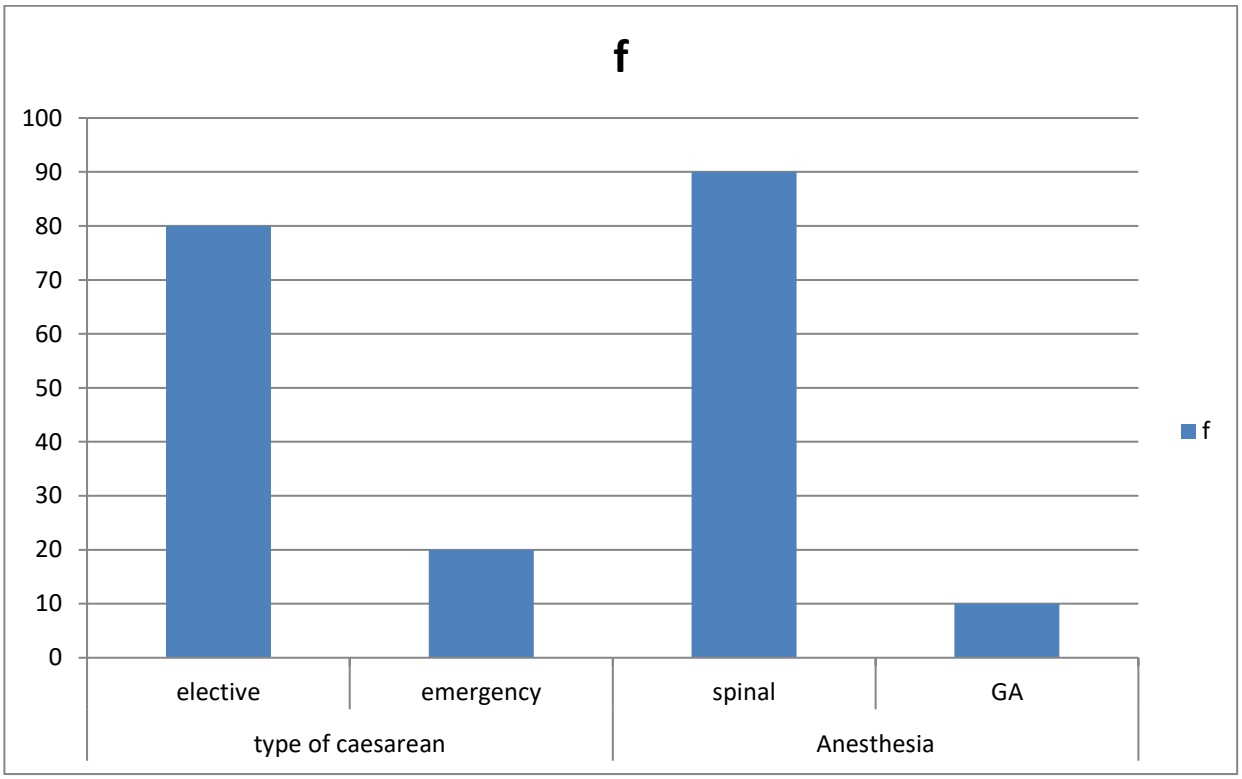

Fig 5- Final results related with Duration of surgery (min)

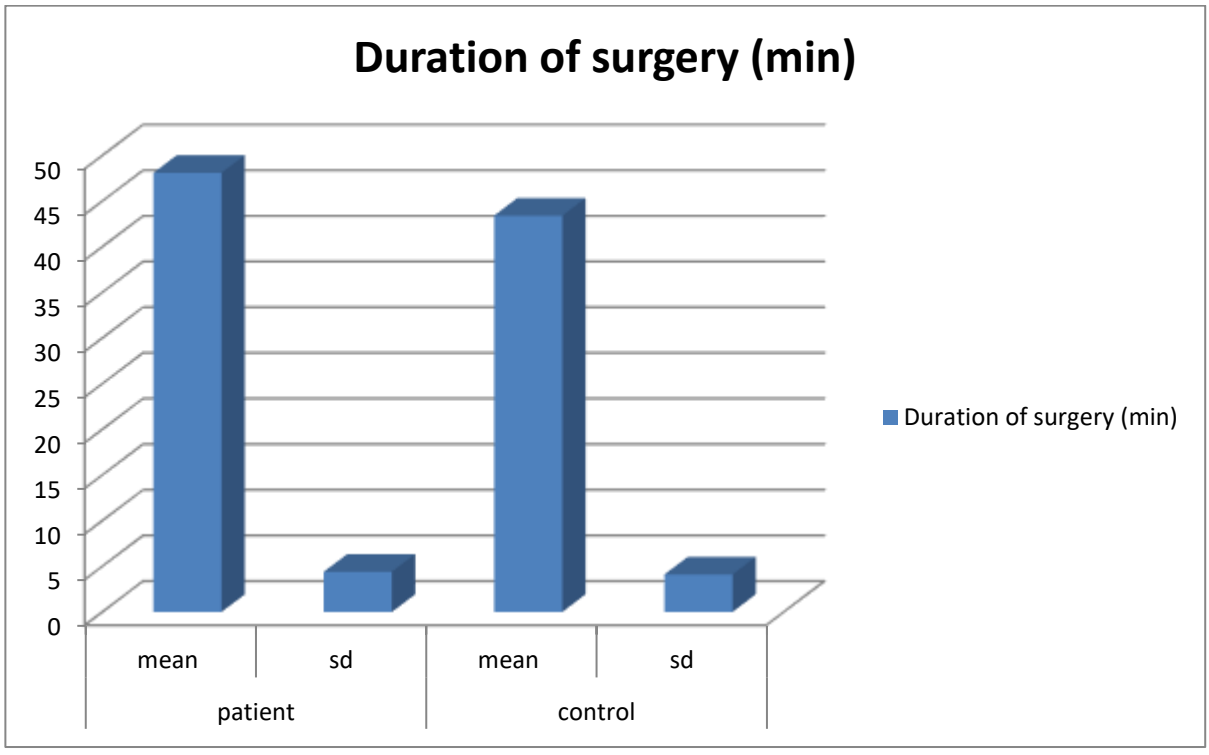

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Table 3- Multivariable analysis to risk factors related to PPH of women who underwent caesarean section

Items	OR 95 %	P-Value
MA	0.77 (0.23-1.1)	0.55
Multiple gestation pregnancy	2.98 (1.77 – 3.45)	<0.001
Gestational age		
37–39 weeks	1.2 (0.8-1.5)	0.01
≥40 weeks	1.1 (0.77-1.4)	0.05
<37 weeks	1.55 (1.3-1.8)	<0.001
Type of pregnancy		
Singleton	1.4 (1.1-1.9)	<0.001
Pre-delivery hemoglobin (g/dl)		
11.8±2.2	0.89 (0.69-1.34)	0.77
8.1±2.2	2.2 (1.78-3.5)	0.003

MA= Maternal age

Table 4- Postpartum hemorrhage complications

Variable	Estimated blood loss < 10 N=40	Estimated blood loss ≥ 10 N=60
infertility	0	1
Uterine perforation.	1	3
Urinary tract infection.	1	2
Hematoma in the pelvis.	0	2
Sepsis.	1	3
Mortality	1	3

DISCUSSION

Caesarean section is one of the most common surgical interventions in the world. It can be associated with potential risks like infection, bleeding, possibility of damage to the abdominal structures, anaesthetic risks, etc.

In fact, there is increase rate of caesarean sections in recent years with subsequent increase in its complications.

Pregnancy usually involves an increase in plasma volume of about 40-50% and a 25-40% increase in red blood cell volume. This increase in volume can lead to attenuating anemia with a decrease in haemoglobin (Hb) and haematocrit, given normal (minimum) values of Hb of 10.5 g/dl and haematocrit of 32% in the third trimester.

More than half of all postpartum haemorrhages occur unexpectedly, and there is no way to predict their occurrence apart from taking history from the pregnant lady. Some of the factors that may cause postpartum hemorrhage are high blood pressure during pregnancy or going through a very long labour.

Postpartum haemorrhage is also more common in cases of twin pregnancies or cases of excessive amniotic fluid (the fluid that surrounds the fetus). [17] And sometimes, the tearing of the vaginal area occurs while pushing the child out, and according to the nature and size of the tear, the extent to which it needs to be

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treated with stitches is determined, and the adult wound can sometimes cause abnormal bleeding
In this study, a previous history of caesarean section and bleeding was identified Postpartum during a single birth, where a logistic regression was found to be greater than the odds of Infection of a woman without a previous history of caesarean section and bleeding [18]
There is difficulty in diagnosing bleeding because it depends on self-assessment of blood loss, so about 50% of bleeding cases are not diagnosed. [19]
Therefore, other methods of diagnosing bleeding were relied upon, such as low hemoglobin, in addition to the need to provide patients with blood. By relying on these measures, the probability of bleeding after natural delivery reached 4%, and after cesarean delivery to 6%.
In most cases, early bleeding is severe and is associated with large blood loss and is also associated with more difficult diseases than those associated with late bleeding. [20]
Caesarean section bleeding is the loss of more than 1000 ml of blood, which is about a liter. The moment of birth and up to 24 hours after it, and late bleeding is after the first day of birth and up to 6 weeks.
The women suffering from anemia during pregnancy exposes her to many complications and health problems, both during pregnancy and during childbirth, as anemia causes caesarean section bleeding in particular, and the real treatment for this type of bleeding lies in treating the cause from the beginning and before undergoing the birth process. Several strategies for treatment. If the mother's haemoglobin level was 11, it was described as mild anemia.
As for the patients, the Estimated blood loss was ≥ 1000 ml, N = 60, and the haemoglobin level was less than ten g%.
According to the medical literature, 10% of caesarean deliveries have severe anemia (haemoglobin <8g/L), and logically, it is multipartum women who have the greatest decrease in haemoglobin due to the difficulty of postpartum uterine contraction.
In our study, women who received general anaesthesia had the lowest bleeding rate without significant differences.
This is understandable because spinal anaesthesia results in pelvic dilatation in favor of uterine bleeding, so it is recommended that in spinal anaesthesia, close the uterus quickly to reduce this risk. The fact that there were no significant differences in the rate of bleeding between general anaesthesia and another type, which in previous studies correlates with a greater decrease in haematocrit

CONCLUSION

The study is an Analysis of risk factors for postpartum haemorrhage for Iraqi women who underwent caesarean section.
In this study, we conclude that a decrease in haemoglobin level preoperative to caesarean section is one of the most influential factors in developing postpartum haemorrhage. In addition, we find a statistically significant increase in the rate of bleeding in association with presence of polyhydramnios, multiple pregnancy, instrumental delivery, and advanced maternal age with a p-value of 0.05. Moreover, the risk of bleeding increase with increment of BMI. In addition, there is significant relationship with the presence of preoperative fever.

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